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ABSTRACT

Seventy-three patients, diagnosed in childhood as having either maturational lag or organic brain syndrome, were followed for an average of 12 years into late adolescence and early adult life for the purpose of discovering the outcome with respect to ultimate psychiatric status, educational attainment, social adjustment, and global adjustment. At the time of followup 6% had no psychiatric disorder, 80% had personality disorders and 14% were borderline psychotic. Eighty-four percent completed high school, 27% attempted college, of whom 12% were still attending or had graduated. Global rating of outcome evaluated 20% as good or satisfactory and 80% as marginal or poor. (SBH)

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FINAL VERSION

MINIMAL BRAIN DYSFUNCTION IN CHILDHOOD: I. OUTCOME IN LATE ADOLESCENCE AND EARLY ADULT YEARS

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PRECIS

Seventy-three patients, diagnosed in childhood as having either maturational lag (38%) or organic brain syndrome (62%) were followed for an average period of 12 years into late adolescence and early adult life for the purpose of discovering the outcome with respect to ultimate psychiatric status, educational attainment, social adjustment, and global adjustment. At the time of follow-up 6% had no psychiatric disorder, 80% had personality disorders and 14% were borderline psychotic. Eighty-four percent completed high school, 27% attempted college of whom 12% were still attending or had graduated. Global rating of outcome evaluated 20% as good or satisfactory and 80% as marginal or poor.

INTRODUCTION

In an attempt to gain deeper insight into the protean manifestations of the disorder most commonly referrred to as minimal brain dysfunction, also known as hyperkinetic child syndrome, brain damage, minimal cerebral dysfunction, or minimal central nervous system dysfunction, its life history has been widely studied both from its childhood beginnings (1-7), as well as retrospectively from its adult manifestations (8-13). Both approaches have yielded important information in respect to the effects of maturation on the clinical picture, the results of treatment, and prognosis.

The design of the various childhood studies and the ambiguities of the historical information in the adult studies are limiting factors with respect to answering many questions about the life history of minimal brain dysfunction. Among the childhood studies, the first and most widely cited, the 25 year follow-up by Menkes et al., (1) evaluated 18 patients drawn from clinic records of the 1930's and 1940's. Although the outcome studies were thoughtful and thorough, the initial diagnoses were made retrospectively based on newly developed criteria and methods of examination that were not yet in use at the time of the original evaluations. Another important study, that of Mendelson et al. (3) on hyperactive children in adolescence, was carried for a relatively brief period of time, two to five years, resulting in a limited perspective. Similarly brief in duration, four years, was the follow-up study by Weiss (2) of 64 out-patients. Huessy

reported on 500 learning-disabled children after an interval of seven years, but his data were derived from teacher questionnaires, and therefore the study lacks clinical detail. The retrospective studies of Quitkin and co-workers (9,10) have been painstaking and ingenious in searching for validation as well as residual nerurological soft signs, and the findings are persuasive but, inevitably, lack the confirmation of a childhood clinical record. Another problem in design has been the choice of patient populations. The studies of Borland et al. (5) and Ackerman el al. (7) were limited to males. Hussey's (6) work was done on a universal population of rural school children.

The current study is an attempt to bring together the childhood and adult manifestation of minimal brain dysfunction, by means of monitoring the clinical course of 73 patients over an average span of 12.4 years, from childhood to adolescence and early adult life. The patients were derived from the author's private practice, all initial and final evaluations and much of the treatment having been performed by her. Several questions were posed, to be answered in the current and subsequent reports: 1. what are the consequences for adult adjustment of the childhood syndrome of minimal brain dysfunction; 2. what residua of organic impairment are detectable beyond the childhood years; 3. what are the characteristic adult manifestations and symptoms; 4. what generalizations can be made about prognosis that may be helpful to pediatricians and to parents; 5. what is the fate of specific childhood symptoms, especially hyperactivity and learning disability; 6. is there a different outcome for patients

with maturational lag than for those with more clearcut evidence of organic impairment; 7. what childhood factors and features influence or predict outcome. This communication will deal with the first ~~four~~ three of these issues; the rest will be the subject of subsequent publications.

A word about terminology is in order. The literature is replete with terms and definitions, owing to a variety of factors. First, diagnostic criteria are in a constant state of refinement, redefinition, and elaboration. Second, clinicians from several related disciplines have addressed the problem of deviant development in childhood, in particular child psychiatrists, pediatricians, child neurologists, developmental psychologists, and educators, each discipline defining the problem in accordance with its conceptual framework. Third, we are not dealing with a single etiology but with a variety of causes, genetic, constitutional, prenatal, infectious, vascular, to name the most common. Fourth, minimal brain dysfunction is a clinically and behaviorally defined disorder which embraces a spectrum of severity. Fifth, there is virtually an infinite range of possibilities with regard to locus of damage. Sixth, the diagnostic criteria are age-specific and the clinical manifestations vary with the developmental level and with maturation. Our operational definition will be that developed by a task force for the National Institute of Neurological Disorders and Stroke (14), exerpted as follows: "children of near average, average, or above average general intelligence with certain learning or behavior disabilities ranging from mild to severe, which are associated with

deviations of function of the central nervous system. These deviations may manifest themselves by various combinations of impairment in perception, conceptualization, language, memory, and control of attention, impulse, or function. These aberrations may arise from genetic variations, biochemical irregularities, perinatal brain insults, or other illnesses or injuries."

METHOD

Seventy-three children seen in private psychiatric practice between the years 1955 and 1967, referred by pediatricians, psychiatrists, or school personnel, were followed at varying intervals for periods of time ranging from ten years to 19 years with an average of 12.4 years. Initial evaluation included history, physical examination for common anomalies, psychiatric, neurological and psychological examination. Where indicated additional examinations were performed by other specialists in child neurology, ophthalmology and radiology. In addition, special studies were performed such as electroencephalograms, karyotype, dermatology phics, and amino acid screening, not routinely but where there was a clinical indication.

The frequency of follow-up visits varied, depending upon whether the child was in active treatment by the author or was receiving therapy elsewhere and returning to the author for medication and periodic re-evaluation. The range of frequency of visits, therefore, varied from weekly to once in five years. The final evaluation, for purposes of this study, was performed in 1976 - 1977 and consisted of an interim history obtained from a parent, a psychiatric evaluation or a telephone interview of the patient, and

psychological studies where possible. The limiting factors in accomplishing a current psychiatric examination were geographic accessibility and willingness of the patient to participate. As with all psychiatric follow-up studies, gaining access to a former patient can be a delicate problem. Some patients were reluctant to submit to re-examination, feeling that their problem had been resolved and not wishing to re-activate the concern that a follow-up visit might generate. Owing to the special relationship developed through years of contact, the parents were uniformly cooperative and, in fact, grateful for the interest shown and for an opportunity to ventilate their concerns. Most parents enjoyed knowing that they were participating in and contributing to a scientific study. Lacking direct interviews of some patients, telephone interviews extending to several hours in duration, combined with corroborating descriptions from parents and data on school and work activity were used in arriving at a final diagnosis. In some instances, an opportunity developed to validate the diagnosis arrived at by those means, when the patient subsequently consented to a re-examination; in all such instances the diagnostic impression derived from the telephone interview procedure was entirely substantiated. It should be noted, in this regard, that the patients were well known to the examiner prior to the final evaluation so that telephone information and behavior was superimposed upon a thorough familiarity with the patient.

RESULTS

The demographic and social features of the sample (table 1) indicate a basically homogeneous sample, consistent with the fact that all patients were referred, all could afford and were oriented toward private care.

With one exception all families were white. The special nature of the sample may have some bearing on particular features of the outcome.

A history of perinatal pathology was present in 78 per cent of cases and included prematurity, bleeding in the first or second trimester, placenta previa, abruptio placenta, caesarian section, prolonged prior sterility, prior spontaneous abortion, as well as neonatal respiratory, hematologic, and infective problems (table 2). A family history of major mental illness, alcoholism, or developmental deviation in first degree relatives was present in 72 per cent. The sample contained six sets of siblings, three sets of boys and three opposite sex pairs, as well as one cousin pair of boys. The significance of this occurrence of multiple instances among siblings was pursued by means of cytogenetic and metabolic studies. In only such family studied to date was any chromosomal abnormality found, a girl with Turner's syndrome; her brother, with typical minimal brain dysfunction syndrome, had neither laboratory nor physical findings consistent with any known anomaly; a third sibling was physically and psychologically normal.

The initial presentation varied with age, but all of the characteristic symptoms of minimal brain dysfunction were well represented (table 3). It should be noted that hyperactivity, considered by some clinicians to be synonymous with minimal brain dysfunction, or at least the prototypical characteristic, was present in 67 per cent of cases, by no means a universal finding. With respect to numbers of initial symptoms, no child had fewer than two symptoms or symptom clusters and 67 per cent had five or more. Boys predominated in symptoms of hyperactivity, tantrums and aggression, and anti-social behavior; girls in fears, delayed motor development, and problems of social relationships, only the last of these approaching statistical significance ($P=0.07$).

Clinical findings typically associated with minimal brain dysfunction were separated into the neurological-psychological and the physical-laboratory (table 4). Of the initial neurological-psychological abnormalities, 9 per cent had only one (one case) or two findings (six cases), 19 per cent had three findings, and 71 per cent had abnormalities in all four areas of function. Physical findings also tended to be multiple, with 62 per cent of the sample exhibiting two or more abnormalities. The chromosome studies, it should be noted, are grossly incomplete because of strong parental reistance to pursuing this line of investigation, even though the service was offered without a fee. The only differences between the sexes in this aspect of presentation was the predominance of electroencephalographic abnormalities in the girls. Interestingly, those patients with seizures, all grand mal in type, manifested their seizures subsequent to the initial diagnosis, in one case six years later.

Intelligence scores were obtained by means of the WISC, the Stanford-Binet, and the Ammons Quick Test. Many subjects had several different measures of intelligence over the course of the years, performed by clinical psychologists, by school agencies, and by the author. In the childhood years individual scores tended to vary very widely, often spanning two or even three of the general categories of intelligence. Moreover, there was a significant disparity between verbal and performance scores, as is typical of the minimal brain dysfunction child. After childhood the I.Q. tended to stablize so that repetition of the test at long intervals (as much as five years) yielded virtually the same result. Because of the early variability and inconsistency (some children's scores improved, some fell, some moved

back and forth in both directions), intelligence was designated by general categories, in accordance with the DSM-II definition (17). Except for an excess number in the borderline retarded category, the total sample followed a normal distribution curve (table 5). When broken down by sex, however, the girls were over-represented in the low average and borderline categories and entirely absent from the above average category, while about equally represented in the average group. An examination of academic achievement (table 6) showed girls to be significantly over-represented in mathematics retardation, which may account in part for their poorer showing in intelligence testing, or vice versa, depending upon one's view of the meaning of intelligence testing.

Ninety per cent of patients received special care in the form of special class placement, tutoring, psychotherapy, pharmacotherapy, residential schooling, and hospitalization (table 7). It should be noted that girls received more speical class placement, probably because of their generally lower I.Q. scores, but no girls were treated with hospitalization, not even those who later on experienced transient psychotic episodes.

The initial diagnosis was sub-divided into the clearly organic group (those with unequivocal neurological impairment) and the maturational lag group (those with language, behavioral, and psychological impairments but with fewer or more equivocal neurological soft signs). It will be noted (table 8) that girls predominated in the clearly organic group, as well as in the borderline retarded and language disorder categories. Boys predominated in the lag group as well as in impulse problems and schizoid features.

At follow-up a final diagnosis was entered for each patient, in accordance with DSM-II (17) nomenclature (table 9). Only five people, 7 per cent of the group were living independently, functioning competently for their age in all respects and apparently free of psychiatric disorder. Of the five, however, at least three continued to manifest evidences of organicity: one had a totally disorganized EEG with a seizure discharge pattern, one had significant neurological signs of incoordination, a third had continuing learning disabilities severe enough to preclude higher education. All were called "normal" since they required no further care or supervision, interacted normally with peers, and were subjectively satisfied with themselves. The rest, 93 per cent, continued to manifest pathology of a degree sufficient to require continuing special services, to evoke continuing parental concern, and to be subjectively significantly distressed and disorganized. Sex differences were notable in that girls predominated in the borderline psychotic category and also tended more toward inadequacy and paranoid symptoms. Boys, as in childhood, were over-represented in the schizoid, impulsive, and anti-social categories.

Learning disability as a secondary symptom (table 10) persisted in 67 per cent, a drop from the 92 per cent recorded initially. The decrease is accounted for by the exclusion of those in whom a diagnosis of borderline retardation was firmly established or those who had completed their education.

The fate of childhood symptoms is of interest (table 11). Anxiety, present in 55 per cent initially, persisted in 34 per cent, with girls predominating, as they had in childhood. Depression, either an uncommon symptom in childhood or else manifested in a way so different from adult depression as to be unrecognized as such, was present in 10 per cent

Obsessionalism, although not uncommon in childhood generally was not a childhood feature of this sample, but occurred in 12 per cent of the adults and only in boys. The life course of tics was similar, and similarly sex-linked. Most important, hyperactivity was now a minor problem and, again, only in males.

The outcome academically (table 12) for the group was on the whole consistent with expectation, i.e. achievement was poor in relation to I.Q. scores. Only 14 per cent earned an academic diploma from high school, although 19 per cent were in the above average to superior and 45 per cent in the average category. Girls did better than boys in high school, with no drop-outs and a higher rate of academic diplomas, despite their lower I.Q.'s. Boys, on the other hand, fared better in college. It should be noted that the current relaxed admissions policy the municipal and community colleges accounts in part for the high college enrollment rate relative to high school achievement.

The social outcome (table 13) reflected to some extent the personality maladjustment of the group as a whole, only 27 per cent having achieved any degree of heterosexual maturity. Of these, only two were married. Among those who considered themselves "engaged", there were no firm plans for marriage. In general, the objects of these alliances were individuals with similarly severe personality difficulties, causing the parents serious doubts and reservations.

Outcome as measured by current activity (table 14) indicated that 78 per cent were either full-time students or in some form of employment.

Four boys (no girls) were in residential care, because of severely handicapping language and social impairments combined with parental incapacity (i.e. illness, loss of one parent through death or divorce).

With regard to final outcome each patient was given a global rating (table 15) arrived at by pooling the parents' impression, the patient's self-evaluation, and certain objective criteria. Criteria of a successful outcome included the ability to pursue studies or work independently, the ability to function with a minimum of parental supervision, evidence of appropriate social and peer relationships. On this basis 27 per cent received a satisfactory rating from the parents, 21 per cent from the author. The satisfactory category included both excellent and merely good types of adjustment. The unsatisfactory classification, including both marginal and poor adjustments, accounted for 73 per cent by the parents' reckoning, 80 per cent by the author's. It should be noted that by either rating, boys had a more favorable outcome than girls.

DISCUSSION

Minimal brain dysfunction is of over-riding interest to psychiatrists, pediatricians, neurologists, and educators for a variety of reasons: its etiology is multifactorial and often obscure; the symptomatology is protean and can be expressed by virtually every form of developmental and behavioral deviation encountered in childhood; the diagnosis is often difficult and to a degree subjective, especially in the pre-school years; the implications for school achievement are serious; the toll on the family

is high; treatment is empirical and non-specific; and the ultimate outcome for the majority is unsatisfactory.

The present study in general validates the findings of others in respect to the ratio of boys to girls (2,2,11,15,16,18); in the initial symptomatology which emphasizes deviance in developmental time-table, emotional lability and immaturity, poor control of impulsivity, hyperactivity, and generally disruptive behavioral traits (14,18,19,20); learning disabilities and disappointing school achievement even in the presence of grossly adequate intelligence (6); special gaps in cognitive abilities including processing of information, retention of new material, and abstract thinking (14,20).

What this study adds, or perhaps only underscores, is the global impairment that minimal brain dysfunction implies and the relatively poor prognosis despite favorable environmental circumstances, early diagnosis, and appropriate therapeutic intervention. It should be emphasized that these cases were chosen prospectively so that, although they all represented fairly clearcut pathology at the start, they also represented a broad spectrum of severity Moreover, the families were reasonably stable, financially secure, and wholly dedicated to their child's welfare. All being of the middle and upper socio-economic classes, with ready access to a full range of support services, they were sufficiently sophisticated and motivated to do the best for their children. Failed appointments, refusal to follow advice, or neglect in no way characterized this group. Even in the families disrupted by death or divorce the remaining parent (in all cases the mother) was exceptionally dedicated to achieving the best possible result. Thus, the reatively poor outcome can be considered either intrinsic to the disorder or, at the least, a consequence of the limitations of our current knowledge with respect to effective therapy.

Certain sex differences are worthy of discussion. Girls, although fewer in number, were more severely affected as measured by their lower intelligence, their greater representation in the clearly organic group, their greater percentage of abnormal electroencephalograms, and their poorer outcome. One possible explanation is that girls are more resistant to the exigencies of intrauterine and post-natal life and, hence, are not as prone to minor degrees of damage as are boys. Another explanation is that girls are more sheltered and subjected to lower expectations, so that small deviances are less apparent and better tolerated. Thus, only the more severely affected girls come to clinical attention. This hypothesis is further borne out in this study by the fact that girls predominated in language disability, a reversal of the common experience for sex ratio in language disorders (15,18). Perhaps the explanation lies at some more basic level of central nervous system biochemical function. In any case, this important clue to basic mechanisms of pathological processes should be pursued.

The fate of specific childhood symptoms is important in offering prognostic information to parents, particularly because these symptoms are so outstandingly troublesome in the early years. One is fairly safe in predicting that hyperactivity will not persist. Indeed, if one were to follow the four boys with hyperactivity for an additional few years, it is quite possible that the symptoms will have abated in them as well, since three of the four were under 20 years of age at follow-up. On the other hand, character traits such as inadequacy (a residuum of childhood immaturity), schizoid personality, passive-aggressive personality, impulsivity, paranoid personality, anti-social personality, and such symptoms as pervasive anxiety, depression, and obsessional thinking are probably more disabling for the adult than is hyperactivity for the child.

The concurrence of psychopathology and minimal neurological impairment has led adults psychiatrists to search for the antecedents of adult psychopathology in childhood, and to identify the common factor as the childhood minimal brain dysfunction syndrome. Whether the problem is approached anecdotally as in Shelley's experience with problem enlistees in the military (11), or more systematically with planned studies (9,10,13), the finding of a continuity between childhood and adult psychopathology is invariable. Wood and co-workers (13) found a variety of personality and mood disorder types including sociopathic personality, explosive personality, alcoholism, lability of mood, and hysterical personality. Quitkin el al (9,10), in their painstaking study of 105 young adults, identified two main types of deviant personality which they characterized as the socially incompetent and the emotionally unstable. Although their only access to childhood data was historical, their adult patients had highly suggestive histories and continued to exhibit soft neurological signs, in addition to gross personality problems.

Childhood minimal brain dysfunction syndrome has been postulated by some (13,21,22,23) to be an antecedent of alcoholism in adults. In all reported studies the diagnosis was made retrospectively and not corroborated. None of the subjects in our study was found to be drinking excessively although a few experimented with drugs and one was a confirmed cannabis user. It is possible, given time, that some of them may become alcoholic. On the other hand, this white, largely Jewish, middle and upper class group is not culturally oriented toward alcohol and, therefore, not comparable to the patient population cited above.

The high incidence of borderline psychosis in the outcome deserves comment. Three of the ten had severe language handicaps associated with meager social skills and accounted for three of the four residential placements. The other borderline psychotics had occasional episodes characterized by behavioral disorganization, loosening of associations, auditory hallucinations, partial disorientation, pathological suspiciousness, and immobilizing anxiety in the course of an otherwise more benign adjustment during which they attended school or held a job or worked in a sheltered workshop. They usually responded well to medication, but two boys required brief hospitalization. Since none of them was clearly psychotic in childhood, one would have to regard this later development as one possible outcome of the minimal brain dysfunction syndrome. The literature records a few such occurrences, or cases that appear to fit into this outcome, particularly those studies that deal with adults (9,10,12), although Menkes' childhood study (1), probably because it continued long enough (25 years), reported four institutionalized psychotics. This type of outcome is an important reason for offering a guarded prognosis at the outset.

The global outcome is, on the whole poorer than that of many reports. Mendelson et al (3) found 55 per cent of that series improved, but their study continued for only five years. Earlier studies in general tended to be optimistic (24,26), but this can be ascribed to the unavailability of late outcome observations. With the passage of time, with newer and more sophisticated types of evaluation, and most especially with the entrance of adult psychiatrists into this field of inquiry, the graver side of the

problem is emerging. Moreover, no one has been able to state with certainty what factors affect outcome. Temperament and environmental influences have been invoked (24,27), but the current consensus is that there is no clear correlation between situational factors and outcome and no way to distinguish what factors are critical in the final result (1,3,28).

In conclusion, it can be restated that minimal brain dysfunction syndrome is not a disease entity but a behavioral-clinical syndrome of multifactorial and often unknown etiology, expressed in varying degrees of severity, with serious implications for childhood adjustment, and with even graver consequences in adult life. Remedial measures undertaken in childhood may alter the course for many, but results of treatment are neither of predictable nor proven value.

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TABLE 1
Demographic Characteristics

		Number	Percent
Sex	Boys	58	80
	Girls	15	20
S-E class	I & II	35	48
	III	38	52
Broken home		10	14
Adopted		6	8
Age at referral	7.0 ± 2.7 years		
Age at follow-up	19.4 ± 3.7 years		
Elapsed time	12.4 ± 3.4 years		

TABLE 2.
Historical Data

	Total		Boys	Girls
	Number	Percent	Percent	Percent
Perinatal pathology	56	78	75	87
Family psychopathology	51	70	72	60
Siblings	6			
Same sex (male)	3			
Opposite sex	3			
Cousins	2			

Table 3.
Initial Symptoms

	Total		Boys	Girls
	Number	Percent	Percent	Percent
School problem	61	84	85	80
Delayed speech	54	74	74	73
Hyperactivity	49	67	69	60
Immaturity, dependency	45	62	62	60
Tantrums, aggression	44	60	62	53
Peer problem*	41	56	50	80
Fears, anxiety	40	55	52	60
Delayed motor development	30	41	38	53
Anti-social	13	18	21	7

*P=.07

TABLE 4.
Clinical Findings

	Total		Boys	Girls
	Number	Percent	Percent	Percent
Neurological-psychological				
Psychological soft signs	71	97	97	100
Neurological soft signs	69	95	93	100
Thought problem	63	86	88	80
Language problem	57	78	78	80
Physical-laboratory				
Stigmata	44	60	60	60
EEG abnormal	13	18	14	33
Seizures	7	10	9	13
Chromosomes abnormal	3	4	3	7

TABLE 5.
Intelligence

Category	Total		I.Q.				Boys	Girls
	Number	Percent	Mean High	S.D.*	Mean Low	S.D.*	Percent	Percent
Above average	14	19	124	7	118	8	24	0
Average	33	45	101	11	85	9	47	40
Low average	12	16	90	10	73	5	12	33
Borderline	14	19	69	13	64	5	17	27

* S.D. = standard deviation

TABLE 6.
Academic Findings

	Total		Boys	Girls
	Number	Percent	Percent	Percent
Retarded reading	59	81	81	80
Retarded mathematics	44	60	57	73
Retarded spelling	25	37	36	40

TABLE 7.
Special Care

	Total		Boys	Girls
	Number	Percent	Percent	Percent
Special education	45	62	59	73
Therapy	66	90	90	93
Residential				
School	4	6	5	7
Hospital	4	6	7	0

TABLE 8.
Initial Diagnosis

		Total		Boys	Girls
		Number	Percent	Percent	Percent
Primary:	maturational lag	28	38	43	20
	organic brain syndrome	45	62	57	80
Other:	Perceptual-motor problems	67	92	90	100
	Learning disability	67	92	90	100
	Impulse problems	51	50	74	53
	Language disability	49	67	62	87
	Schizoid features	23	31	35	20
	Borderline mental retardation	14	19	17	27

TABLE 9.
Final Diagnosis: Primary

	Total		Boys	Girls
	Number	Percent	Percent	Percent
No psychiatric disorder	5	7	7	7
Borderline psychotic	10	14	12	20
Personality disorder	58	80	81	73
Inadequate	36	49	47	60
Schizoid	32	44	40	28
Pass.-aggr.	29	40	40	40
Impulse	12	16	19	7
Paranoid	11	15	12	27
Anti-social	10	14	16	7

TABLE 10.
Final Diagnosis: Secondary

	Total		Boys	Girls
	Number	Percent	Percent	Percent
Learning disability	49	67	67	67
Organic brain syndrome	42	58	57	60
Borderline mental retardation	14	19	17	27

TABLE 11.
Final Diagnosis: Symptoms

	Total		Boys	Girls
	Number	Percent	Percent	Percent
Anxiety	25	34	31	47
Depression	7	10	10	7
Obsessions	7	10	12	0
Tics	5	7	9	0
Hyperactivity	4	6	7	0